

ON THE APLACOPHOUS AMPHINEURA OF THE BRITISH SEAS.

By WALTER GARSTANG, M.A., F.Z.S.

Read 12th June, 1896.

PLATE X.

THE remarkable worm-like Molluscs now associated with the Chitons in the order Amphineura, possess a high interest, owing to the unique way in which these animals combine great simplicity of appearance and structure with distinctively Molluscan features. Beneath their simple, worm-like guise, however, these creatures betray unmistakable signs of retrogression from a higher grade of organization. The ciliated furrow along the ventral surface of the body looks like a persistent elongated blastopore, or the ciliated ventral surface of an Archannelid. There can be little doubt, however, that it is a relic of an ancestral mantle-cavity like that of a Chiton. The slender, razor-like fold enclosed within the groove is an heirloom from ancestors with a well-developed creeping foot. The pharynx, smooth in some forms, armed with a single tooth in others, is furnished with a typical radula in certain other types. The coat of fine spicules which envelops the body looks like a primitive form of exoskeleton. Yet Pruvot tells us that in one instance, at any rate, the larva has a series of well-developed Chiton-like plates along its back, which appear to be shed when the creature settles down to its typical mode of life. There seems to be ample reason, therefore, for regarding, with Simroth, the Aplacophorous forms of Amphineura as degraded from a more Chiton-like ancestral condition. Their residence in deep water, beneath the tidal zone and beyond the influence of waves and storms, has enabled these creatures—as compared with the littoral Chitonidæ—to dispense with their plate-like armature and suctorial foot, and to adopt new habits and assume new forms. Some burrow in mud; many, however, lead a semi-parasitic existence, creeping about on the surface of Aleyonarian corals or twining their flexible bodies round the stems of Hydroid Zoophytes.

In the hope of drawing the renewed attention of English malacologists to this inviting group of Molluscs, I give below a list of the forms which are at present known to inhabit British seas. Two of these have been recorded within the last fifteen months. This fact, when the number of forms now known from neighbouring seas is taken into consideration, renders it very probable that the British list of these Molluscs is far from completed.

The classification and nomenclature adopted is that of Simroth's recent revision (1893).

APLACOPHORA.

I. Fam. CHÆTODERMATIDÆ.

Body constricted into three segments. Ventral furrow absent. Mantle-chamber reduced to a small posterior cloaca. Two gill-plumes in the cloaca. Radula in form of a single tooth.

Habits.—Burrow in mud. No British representatives.

II. Fam. NEOMENIIDÆ.

Body uniformly elongated, without constrictions. A ventral furrow present. No true gill-plumes. Respiratory organs, when present, in the form of simple protuberant folds of the wall of the rectum. Radula present or absent.

Habits.—Creep on the surface of mud, or on water-plants (*Posidonia* ?); or live in a semi-parasitic manner on corals and Hydroid Zoophytes.

1. NEOMENIA, Tullberg, 1875.

Body 2–3 cm. long. Cloaca subterminal, continuous with the ventral furrow. A pedal ridge in the furrow. Spicules needle- or lancet-shaped, projecting far out of the cuticle. Ectodermal papillæ short, with broad stalks. No radula.

1. *Neomenia carinata*, Tullberg, 1875. Back keeled.

Distribution.—Shetland (A. M. Norman): Upper Loch Etive, 50–70 fathoms (Dr. J. Murray). [North Atlantic, west coast of Scandinavia.]

2. *Neomenia Dalyelli*, Kor. and Dan., 1877. ? *Vermiculus crassus*, Dalyell, 1853. Back not keeled. A large spicule on each side of cloaca.

Distribution.—Scotland? (Dalyell). [Norway.]

2. RHOPALOMENIA, Simroth, 1892–4.

Body worm-like, pointed in front and behind. Cloacal opening a long ventral slit, with which the ventral furrow is continuous. Pedal ridge present. Cuticle crowded with needle-like deciduous spicules, pointed at both ends. Ectodermal papillæ club-shaped, with slender stalks, reaching almost to the surface of the cuticle. Radula polystichous or absent. Length 6–60 mm.

3. *Rhopalomenia aglaopheniæ*, Kow. and Mar., 1887. Body elongated, up to 32 mm. in length, somewhat attenuated posteriorly. Radula absent.

Distribution.—Plymouth. (Two specimens, coiled round stems of *Aglaophenia myriophyllum*, dredged in 25–30 fathoms, April, 1896. W. G.) [Banyuls, Marseille.]

3. MYZOMENIA, Simroth, 1892–4.

Body elongated, worm-like, cylindrical. Anterior end thickened to form a knob-like head. Cloacal opening ventral. A short finger-like tail behind the cloaca. Ventral furrow smoothed out, forming a longitudinal streak. Spicules shield-shaped or leaf-like, imbricating. No respiratory folds of rectum. No radula.

4. *Myzomenia Banyulensis*, Pruvot, 1890. Length 30 mm. Colour bright crimson.

Habitat.—Coiled round the stems and branches of the Hydroid *Lafoëa dumosa*.

Distribution.—Plymouth. (April, 1895. Half-a-dozen specimens. E. J. Allen, W. G.) [Banyuls, Roscoff.]

